“The Fine Line: Pelvic Pitfalls: Deceptive Findings in Pelvic Ultrasound”

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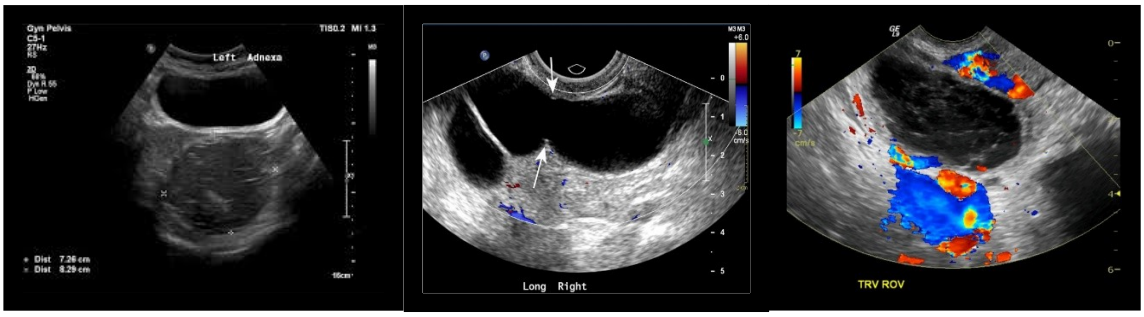
Ultrasonography is undeniably one of the most powerful tools in modern diagnostic imaging, with its ability to provide real-time, dynamic views of soft tissues and organs. However, the effectiveness of an ultrasound scan hinges on more than just the technology—it’s the expertise and discernment of the radiologist that bring each image to life.

Achieving the right diagnosis with ultrasound depends on many factors: the quality of the equipment, patient cooperation, optimal bladder filling, minimal intestinal gas, and, of course, a vigilant and adaptable mindset from the operator.

Pelvic imaging is a realm where even the most seasoned radiologists can encounter surprising pitfalls, with structures that often imitate each other in unpredictable ways. This case series delves into common but deceptively tricky situations where a fleeting glance might lead to misinterpretation. Here, we aim to bring clarity to those subtle yet significant differences that distinguish one diagnosis from another.



Case 1:

Clinical History: A 32-year-old woman with a history of abdominal bloating and mild pelvic discomfort and menstrual irregularities presents for an ultrasound. The patient complains of intense urge to micturate and is also associated urinary frequency, denies any pain / burning sensation during urination.

Initial Ultrasound Appearance: Urinary bladder was completely distended showing no calculi within. Uterus visualized normal. One ovary visualized normal. Other ovary could not be distinctly visualized – The report was generated based on what was seen!

Twist in the tale: Follow up was requested by the referring clinician (Secondary to mild increase in discomfort) - Large midline structure was actually a pelvic cyst that initially masqueraded as a full bladder.

Conclusion: While this structure was mistaken for a bladder due to its midline location and symmetry, the absence of squarish margins, well-defined edges gave away the true identity. Absence of ureteric jet is another indicator in this instance.

Take-Home Punchline: "When in doubt, wait for the stream—it's the bladder's signature move!"

Case 2: The Gaslighted Ovary

Clinical History: A 32-year-old woman presents with lower abdominal pain and intermittent bloating. She's had irregular cycles but no other significant symptoms.

Initial Ultrasound Appearance: A suspicious hyperechoic focus found adjacent to the left ovary resulting in scattered bright echoes. The report was issued – stating that there is excessive bowel gas.

Final Diagnosis: Ovarian teratoma (dermoid), with mixed echogenic components, including fat and calcifications, that mimicked gas.

Conclusion: Teratomas or dermoids, often contain odd tissue components, including fat, hair, and even bone, which produce confusing echoes similar to gas. Recognizing these unusual reflections can avoid misdiagnosis.

Take-Home Punchline: "Not all bubbles pop! When shadowing lingers, think teratoma."

Case 3: The Sneaky Salpinx

Clinical History: A 41-year-old woman with chronic pelvic pain and recent worsening discomfort visits the clinic. She has a history of pelvic infections but no surgical history.

Initial Ultrasound Appearance: Multiloculated cystic structure alongside the uterus-showing incomplete internal septations. Resembling a cyst, yet doesn't fully match the typical round ovarian cyst shape.

Final Diagnosis: Hydrosalpinx, a fluid-filled, dilated fallopian tube.

Conclusion: The "cogwheel" sign from mucosal folds in hydrosalpinx can be mistaken for cysts. Its tubular shape and the absence of typical ovarian structures confirmed its true identity. The buzz word is incomplete internal septations!!!!

Take-Home Punchline: "Don’t get twisted—if it’s tubular with incomplete septae- think hydrosalpinx, not a cyst!"

Case 4: The Cyst that Cried Wolf

Clinical History: A 28-year-old woman with acute onset of sharp pelvic pain arrives in the emergency department. Her last menstrual period was two weeks ago, and she’s had no recent health changes.

Initial Ultrasound Appearance: A complex, echogenic structure appears within the ovary. It’s difficult to discern whether it’s a solid mass or a hemorrhagic cyst, as it contains both solid-looking regions and some cystic fluid.

Differentials: Solid adnexal mass, hemorrhagic ovarian cyst, or endometrioma.

Final Diagnosis: Hemorrhagic cyst, verified through repeat imaging as the appearance slowly resolved.

Conclusion: While hemorrhagic cysts can initially appear complex and solid-like, they typically resolve on follow-up, unlike true solid masses. Let time and patient stability guide management.

Take-Home Punchline: "If it’s complex and confusing, give it time—a tumor won’t back down."

Case 5: The Torsion Illusion

Clinical History: A 23-year-old woman with severe, sudden-onset right-sided pelvic pain presents to the emergency room. She’s nauseous, and painkillers have offered minimal relief.

Initial Ultrasound Appearance: The right ovary appears enlarged with a slightly irregular outline, though some blood flow is still detected on Doppler, raising doubts about torsion.

Final Diagnosis: Ovarian torsion confirmed intraoperatively despite preserved Doppler flow.

Conclusion: Ovarian torsion can sometimes retain blood flow due to dual blood supplies. When clinical signs point toward torsion, follow through, as Doppler alone may mislead.

Take-Home Punchline: "Flow isn’t everything! Look deeper—torsion’s a twisty foe."

This collection of cases highlights some of the most misleading situations in pelvic ultrasound and provides memorable takeaways that are both practical and engaging.

By staying receptive to different possibilities, they avoid jumping to conclusions and instead build a nuanced, patient-centered diagnosis. In the world of ultrasound, it’s not just about seeing—it’s about seeing beyond.